

March 19, 2004

MEMORANDUM TO: Daniel M. Gillen, Chief
Decommissioning Branch
Division of Waste Management
Office of Nuclear Material Safety and Safeguards

FROM: Ted Smith, Project Manager /RA/
Section B
Division of Waste Management
Office of Nuclear Material Safety and Safeguards

SUBJECT: MEETING WITH CONNECTICUT YANKEE ATOMIC POWER
COMPANY TO UPDATE DECOMMISSIONING STATUS

A meeting was held on March 9, 2004 in Rockville, MD to review the status of decommissioning activities ongoing at the Haddam Neck Plant. The meeting report is enclosed.

NRC Docket No.: 50-213
NRC License No.: DPR-61

Enclosure: As stated

MEETING REPORT

DATE: March 9, 2004

TIME: 9:30 - 12:00 noon

PLACE: One White Flint North
11555 Rockville Pike
* Rockville, Maryland 20852-2738

PURPOSE: Status of Connecticut Yankee License Termination Plan (LTP)

ATTENDEES: Refer to Attachment A

BACKGROUND:

The licensee, the Connecticut Yankee Atomic Power Company (CYAPCO), requested a meeting to present current status on decommissioning of the Haddam Neck Plant.

DISCUSSION:

CYAPCO presented information on Haddam Neck in the following areas: decommissioning approach and update, groundwater monitoring, soil characterization results and plans, future groundwater monitoring activities, the biennial LTP update and potential LTP amendments.

Decommissioning Approach & Update

CYACPO has modified their approach from leaving buildings and structures in place to demolition and bulk disposal. Under the revised approach, all structures will be removed to four feet below grade. Secondary side buildings will be free released before demolition, while buildings in the radiologically contaminated area will be decontaminated prior to release for demolition.

Tank farm soil removal is now scheduled to begin in May 2004, along with removal of secondary side buildings. Spent Fuel movement to the storage facility should be completed by April 2005, and complete site decommissioning is scheduled to be complete in December 2006.

Groundwater Monitoring

CYAPCO presented a summary of groundwater monitoring for December 2003, including well data for tritium and strontium. Through an extensive number have soil samples, they have identified areas on site where soil appears to be affecting groundwater radiologically, which includes areas under the tank farm, adjacent to the reactor containment building, adjacent to the primary auxiliary building, and east of the resin storage facility.

Soil Characterization Results and Plans

The identified soils are included in the removal effort slated to begin in May of this year. CYAPCO indicates they will remove the soils containing elevated contamination down to bedrock, backfill with clean material, and install monitoring wells.

Enclosure

Future Groundwater Monitoring Activities

CYAPCO is working on three tasks detailed in the February 2002 Phase II Hydrogeologic Investigation Work Plan: (1) review and document existing information, which should be completed this April; (2) characterize site-specific hydrogeologic conditions, to be completed this fall; and (3) develop a contaminant fate and transport model, scheduled for March 2005.

Biennial LTP Update

CYAPCO discussed changes anticipated in the biennially required update to the LTP, which will include changes in chapters 1-3, 5, 7 and 8 to incorporate the revised decommissioning approach previously discussed, including consolidation of survey areas; updates to the predicted waste volumes; modifications to final status survey plans to reflect the revised decommissioning approach; an update of the decommissioning cost estimate and an update of the environmental report.

Potential LTP Amendments

CYAPCO indicated they have two potential license amendments to be submitted to NRC, based on changes to the derived concentration guideline limits (DCGL) for concrete. The proposed amendments are anticipated in late July and October 2004.

ACTIONS:

None.

ATTACHMENTS:

- A. Attendees list, as stated above
- B. CYAPCO slides on meeting topics
- C. CYAPCO map of Final Status Survey Scope
- D. CYAPCO map of Demolition Sequence

MEETING ATTENDEES

Date: 9 MARCH 2004

Topic: CY Decommissioning Update

NAME	AFFILIATION	PHONE NUMBER
Claudia Craig	USNRC	301-415-7274
Dan Gillen	USNRC	301-415-7295
Ken Hader	CYAPCO	860-267-3928
Jon Peckenpaugh	USNRC	301-415-6753
Chuck Miller	CYAPCO	860-267-3653
ERIC DAROIS	CYAPCO	603-778-2871 x29
Rich McGrath	CYAPCO	860-267-2556 x3573
Terence Peacock	CYAPCO	860-267-3555
RAVI JUSHI	CYAPCO	860-267-3578
Ted Smith	USNRC	301 415-6721
David Lewis	Shaw Pittman	202 663 8474
Leanne Peluso	USNRC	via bridgeline
Marie Miller	USNRC	via bridgeline
Phil Newkirk	EPD	" "
Milce Firsich	CT - DET	" "
Jason Flemming	USNRC	301 415 5787
Chris McKenney	USNRC	301 415 6663
Dwayne Schmidt	NRC/DWM/DCB	301-415-6919

Decommissioning, Groundwater and LTP Update

Meeting with USNRC
March 9, 2004

A#3

Discussion Topics

- Decommissioning Approach & Update
- Groundwater Monitoring Results
- Groundwater Source Identification and Removal Plans
- Groundwater Characterization Activities
- Biennial LTP Update
- Potential LTP Amendments

D&D Approach: Demolition and Bulk Disposal

- Remove Structures to 4 ft Below Grade
- Perform Final Status Survey on Remaining Soil and Structures
- Free Release Secondary Side Buildings Before Demolition & Disposal
- Decontaminate RCA Buildings to Allow Open Air Demolition
- Remove Selected Basements to Eliminate Difficult Decontaminations
- Assure Backfill Material Monitored for Naturally Occurring Radioactivity

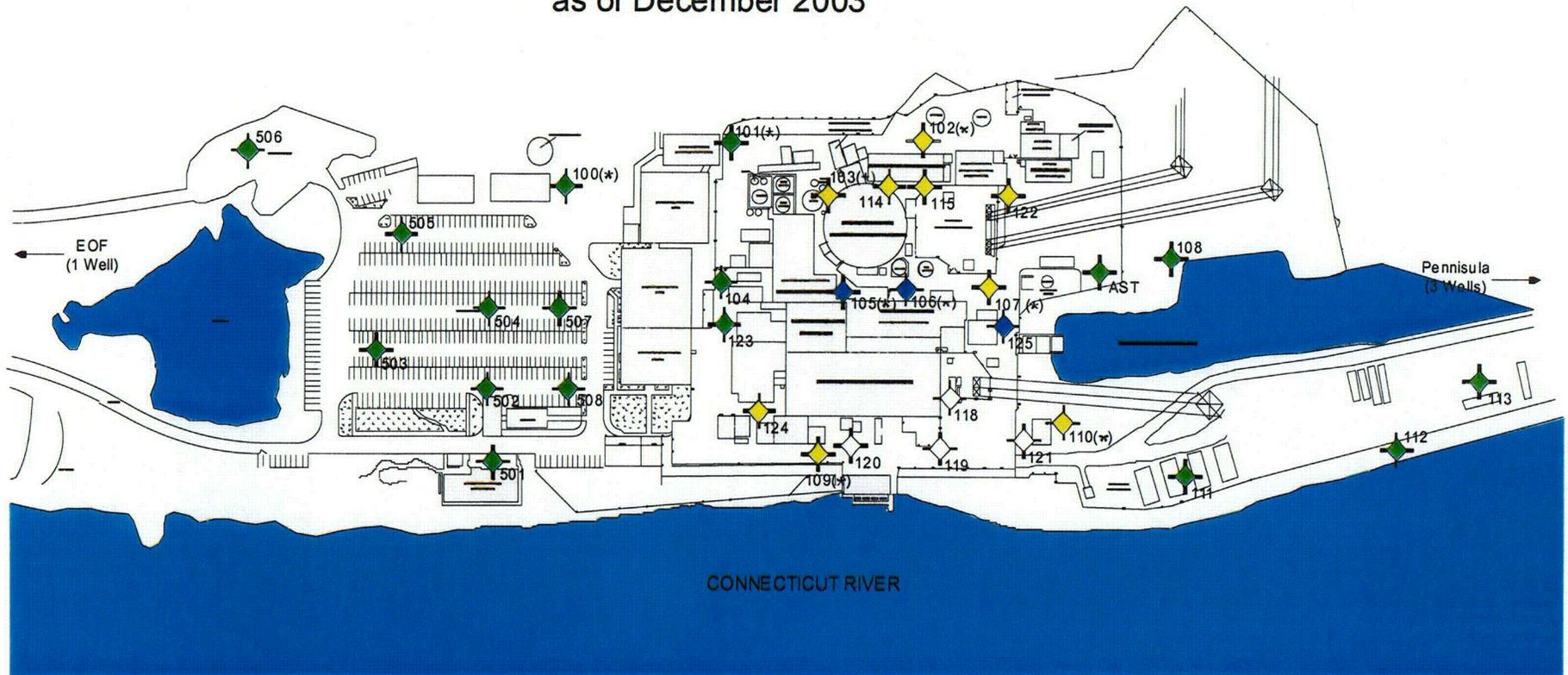
Decommissioning Update

- Large Components Complete
- FSS of 400 Acres - Class 2 and 3 Areas Complete
- ORISE Inspection of FSS Areas Underway
- 1st GTCC Canister Located on ISFSI 4/04
- Start Secondary Side Building Removal 5/04
- Start Tank Farm Soil Removal 5/04
- Start RCA Building Removals 7/04
- Complete Fuel Transfer 4/05
- Complete Physical Decommissioning 12/06
- Release Non-ISFSI Areas From License Mid-2007

GROUNDWATER MONITORING Summary as of December 2003

Rifle Range
(9 Wells Total, 8 Previous and
1 New Well)

C-01

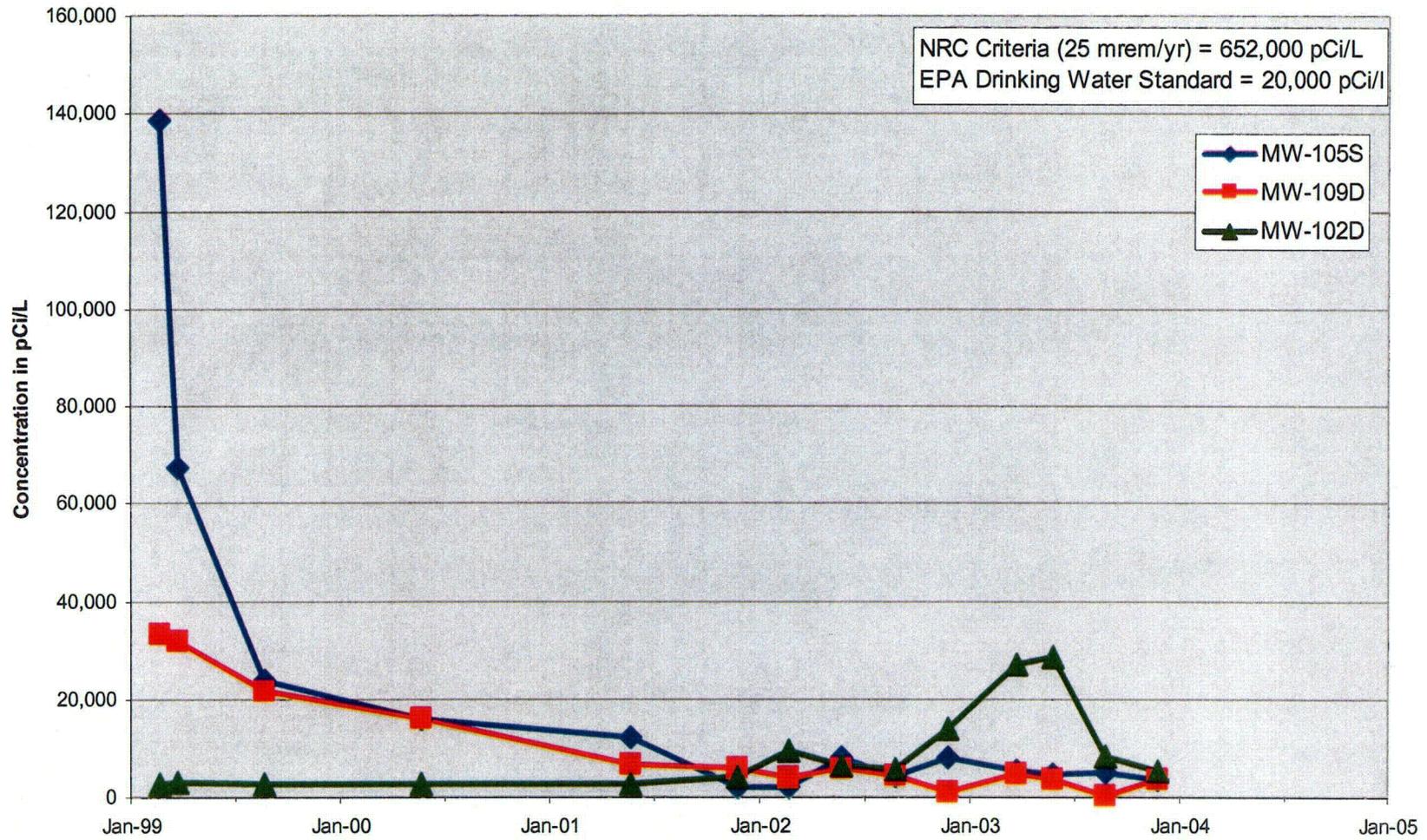


Status as of December 2003 Sample Round Rev 3 3/8/04

- = Well Location - No Detectable Plant Related Radioactivity over 1 mRem/yr
- = Well Location - Detectable Tritium over 0.015 mRem/yr (400pCi/L)
- = Well Location - Detectable Tritium over 0.015 mRem/yr and Strontium over 0.2 mRem/yr (2 pCi/L for Sr-90)
- = Well Location - New Well
- = Shallow and Deep Well Location

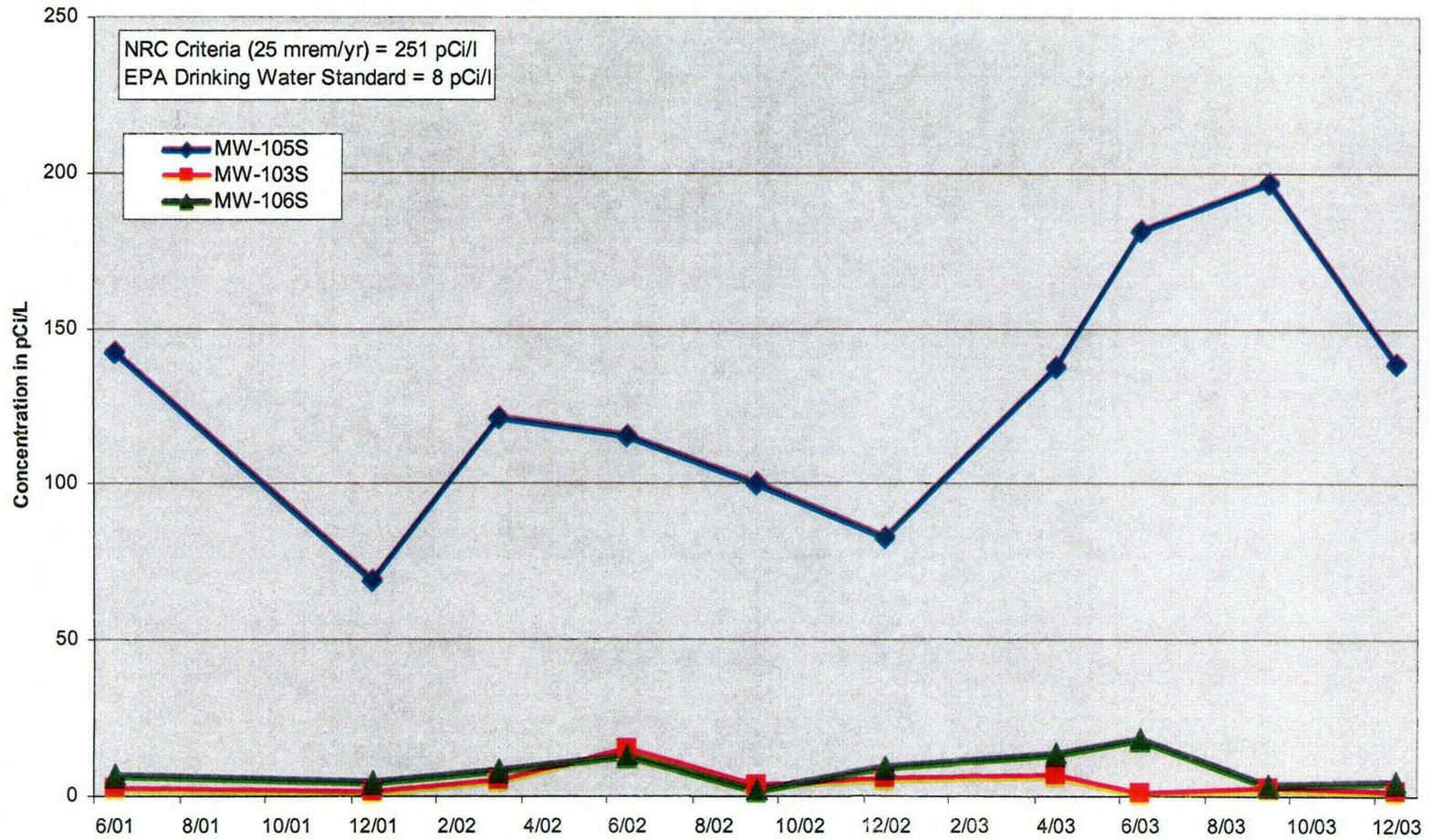
Note: 1) Samples analyzed to a Minimum Detection Sensitivity of 1 mRem/yr for Individual Nuclides
2) Cs-137 in Well # 103S was at 0.8 mRem/yr (13.5 pCi/l)

Tritium Trend



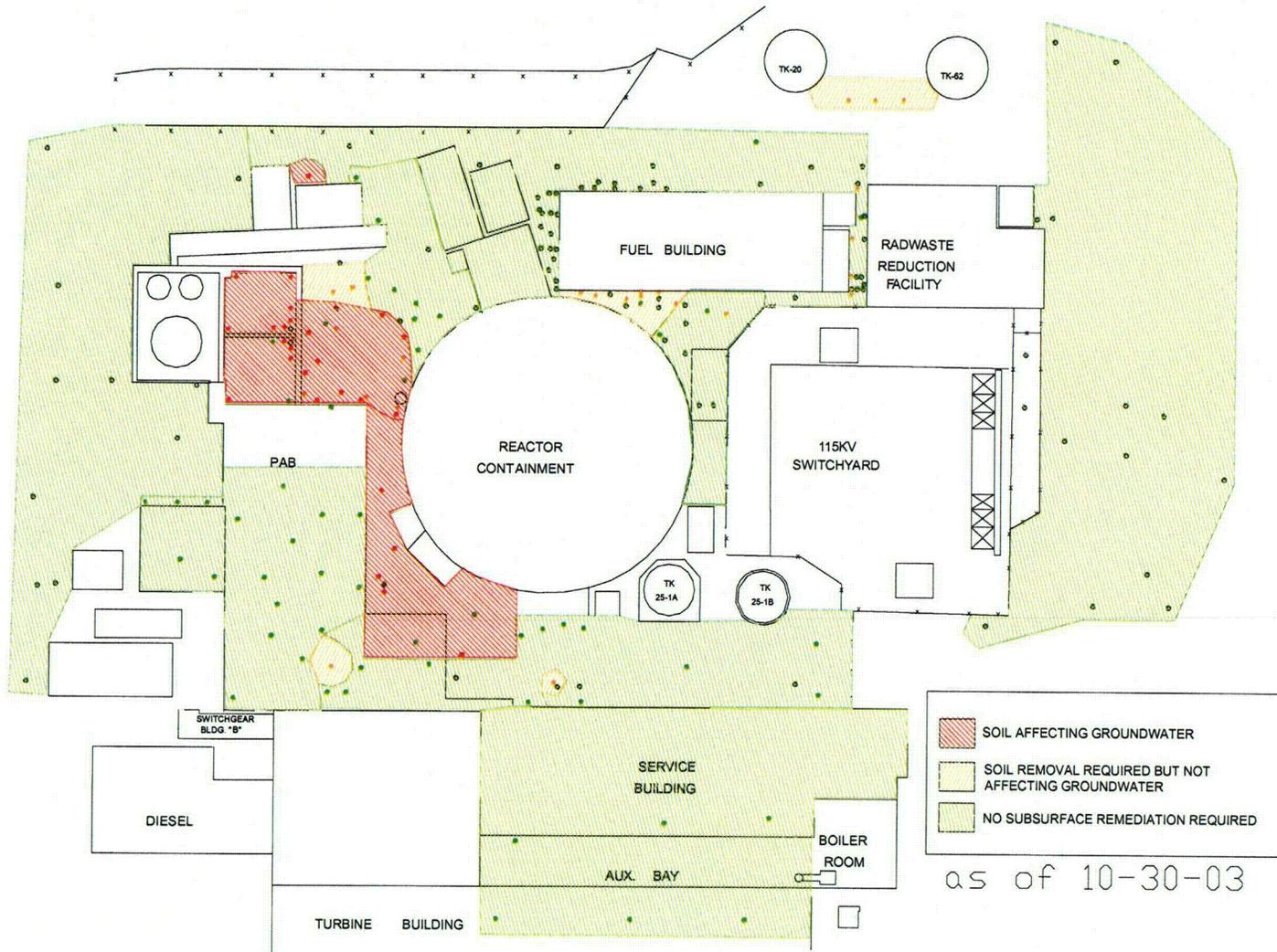
C-02

Strontium-90 Trend



C-03

GW Source Identification



C-04

Soil Remediation Plans

- Remove Soil from Areas Containing Elevated Contamination to Bedrock – Target Area is Groundwater Source:
 - Tank Farm Area including Structures
 - East of Resin Storage Facility
 - Area between Containment and PAB
- Install Well in Area to Monitor for any Residual Contamination

Groundwater Characterization Activities

- Conduct Routine Groundwater Monitoring
- Review and Document Existing Information - Phase II Plan, Task 1
- Characterize Site-specific Hydrogeologic Conditions – Phase II Plan, Task 2
- Develop Contaminant Fate and Transport Model – Phase II Plan, Task 3

Ongoing Groundwater Monitoring

- Continue Quarterly Groundwater Sampling
- Decommission Un-needed Wells
- Installed Water Level Monitoring System
 - 33 Monitoring Points, Including Shallow and Deep Zones
 - Include Surface Water Points at Storm Water Pond, River, and Canal

Phase II Hydrogeologic Work Plan:

Task 1

- Conceptual Site Model Elements
- Review of Existing Hydrographs/Water Level Data
- Assessment of Apparent Contaminant Source Areas
- Catalog of Well and Boring Logs
- Description and Mapping of Bedrock Features
- Hydrogeologic Cross Sections
- Preliminary Groundwater Geochemistry Evaluation
- Evaluation of Substances of Concern
- Preliminary Hydrogeology Evaluation
- Measurement Data QC Review
- Inventory of Nearby Water Supply Wells

Phase II Hydrogeologic Work Plan: Task 2

- Implement Improved Bedrock Packer Tests
- Install Bedrock Monitoring System Based On Packer Test Results
- Assess Aquifer Hydraulic Conductivity
 - Packer Test Measurements
 - Mat Sump Observations - Long-term Groundwater Extraction
 - Slug Test Measurements - Localized Measurements
- Assess Tidal Influence on Groundwater
- Install Additional Monitoring Wells as Needed
- Collect Other Supplemental Site-Specific Information to Support Fate and Transport Modeling

3-D Fate and Transport Model: Task 3

- Select Appropriate Simulation Code based on Site Conditions
- Preliminary Conceptual Model Elements Include the Following:
 - Aquifer System Includes Shallow Unconsolidated Formation Overlying Fractured Bedrock
 - Large variability in unconsolidated system thickness
 - Bedrock appears to be anisotropic fractured system
 - Connecticut River is Ultimate Discharge Boundary
 - Paired wells near the river shore exhibit upward vertical hydraulic gradient
 - Consistent with the regional concept of the river as a discharge boundary.

Biennial LTP Update

- License Termination Plan (LTP) was submitted as a Supplement to the Haddam Neck Plant FSAR
- LTP was approved via License Amendment on November 25, 2002
- 10 CFR 50.71(e) requires an update of the FSAR (LTP) at intervals not to exceed 24 months
- An update of the LTP will be submitted prior to November of 2004 – No Changes Requiring NRC Approval Expected
- All changes evaluated against License Condition and 10CFR 50.59 Criteria

Biennial LTP Update

Chapter 1: Update Decommissioning Plans

Chapter 2: Change Survey Areas

Chapter 3: Update Waste Volumes

Chapter 5: Modify Final Status Survey (FSS) Plan

- Modify Area Surveillances

- Describe Surveys of Excavations

- Describe Surveys of Excavations to Bedrock

- Use of Groundwater Information

Chapter 7: Update Decommissioning Cost Estimate

Chapter 8: Update Environmental Report

Biennial Update Changes

- Chapter 1:
 - Decommissioning Approach Changed to Demolition and Bulk Disposal of Structures
 - Structures Removed to 4 ft Below Grade
- Chapter 2:
 - Reduced Number of Survey Areas
 - Reflects Building Demolition
 - Number of Survey Areas Reduced from 233 to Approx 100
 - Updated Land Areas to Include Footings Remaining Under Removed Buildings, Excavations

Biennial Update – Chapter 5

- Area Surveillances
 - Quarterly Walkdown of Areas where FSS is Complete
 - Survey/Sample Based on Walkdown, Event Driven Investigations
 - Investigation Survey Data will be Statistically Compared to FSS Data to Determine the Need to Repeat the FSS
 - Consistent with Industry Practices

Biennial Update – Chap. 5 (Cont.)

- FSS of Excavations After Radiological Remediation
 - Perform Remedial Action Survey (RAS)
 - Scanning
 - Soil Sampling
 - Turnover Survey Performed if Needed
 - Data from the RAS used as Input to the Design (DQOs) for the Surface & Subsurface Final Status Surveys

Biennial Update – Chap. 5 (Cont.)

- FSS of Excavations Resulting from Piping/Conduit Removal
 - Characterization Survey Performed (Graded Approach)
 - Scanning of Suspect Areas
 - Soil Sampling of Areas w/Elevated Scan Results
 - Biased Sampling if No Elevated Scan Results
 - Characterization Data used as Input to the Design (DQOs) for the Surface & Subsurface Final Status Surveys

Biennial Update – Chap. 5 (Cont.)

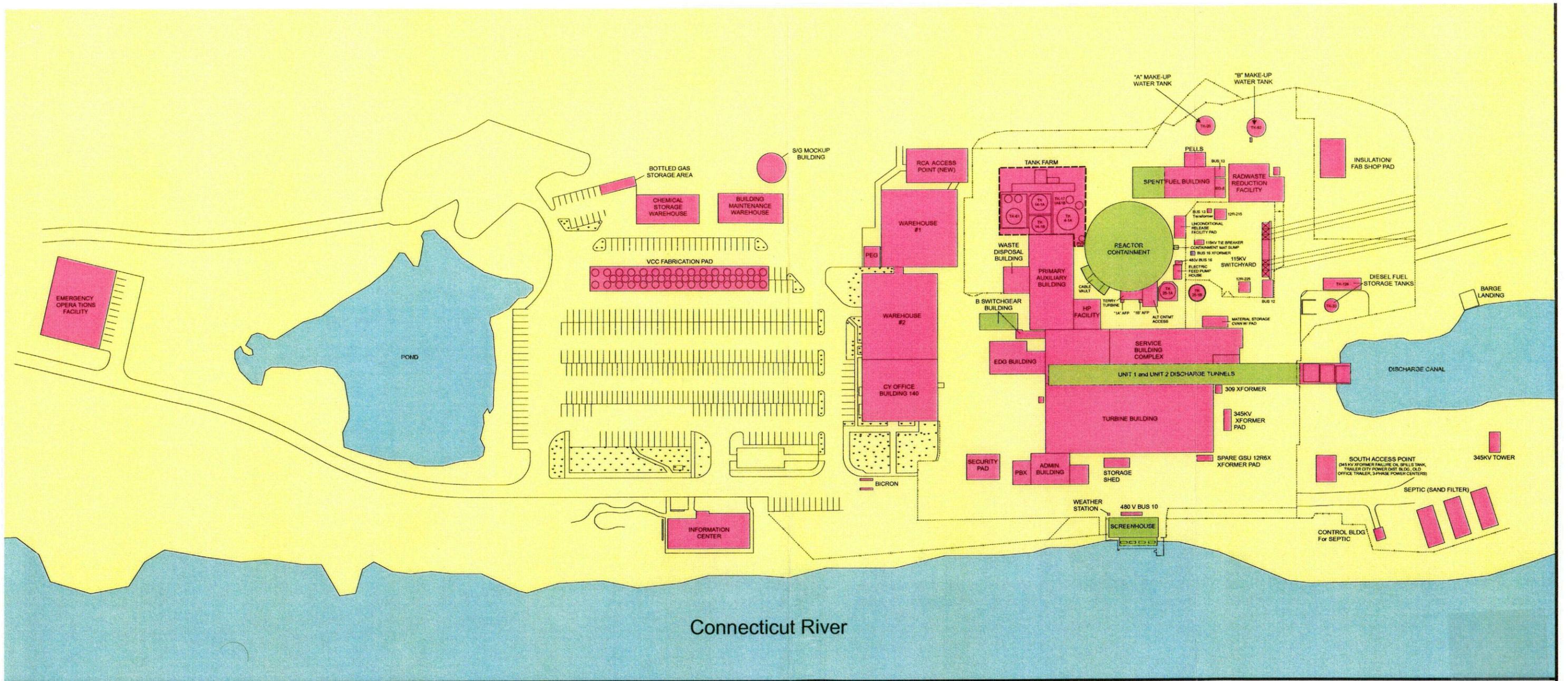
- FSS of Excavations to Bedrock
 - Show Compliance with the LTP for Areas where Remediation has been Performed to Bedrock by:
 - Post Remediation Assessment of Bedrock Contamination to Project Future Groundwater Dose
 - Perform Surface FSS of Backfill Area Soil
 - Excavation Area Included in Subsurface FSS
 - Groundwater Dose Calculated from Monitoring Well Concentration
 - Soil and Groundwater Dose will be added to show Compliance with Release Criteria

Biennial Update – Chap. 5 (Cont.)

- Groundwater Related Considerations
 - Applicability of Phase II Groundwater Studies
 - Fate and Transport Model to Identify Area With Highest Groundwater Concentration
 - Installation of Wells (if needed) to Monitor Highest Location
 - Monitor Groundwater For Dose Determination at Highest Location
 - Monitor Through Minimum of 18 Months and Two Spring Seasons After Target Area Soil Remediation
 - Verify Contaminant Concentration Steady or Decreasing
 - Use Contaminant Concentration as Basis for Dose Determination
 - Phase II Plan Groundwater Studies Will Be Used to Determine Zone of Influence

Potential LTP Amendments

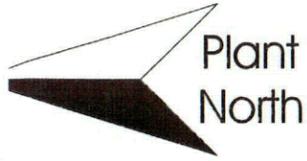
- Reactor In-Core Sump Concrete Activation
 - Similar to Maine Yankee License Amendment
 - Awaiting Further Characterization
 - Will Increase Base-Case DCGL
- Volumetric Concrete DCGL
 - Remove Significant Conservatism
 - Buried Debris No Longer Considered
 - Considers Diffusion of Contaminants out of concrete (vs. instantaneous release)
 - Based on ongoing Characterization
 - Will Increase Base-Case DCGL



- OPEN LAND AREAS
- CONCRETE STRUCTURE REMAINING 4' BELOW GRADE
- SUB-SLAB SOILS / FOUNDATION 4' BELOW GRADE (IF ANY)

Attachment
C

March 3, 2004 Rev. 1
Yeller/FSS Activities/FSS Scope.cdr



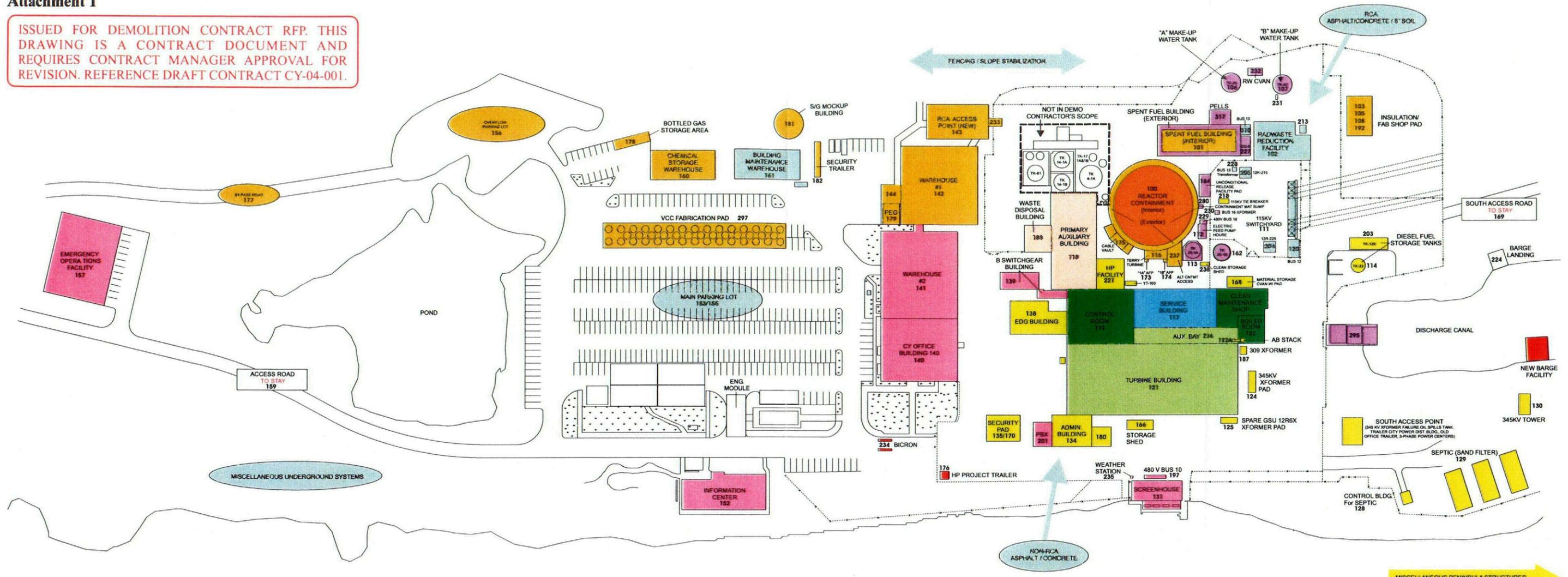
CONNECTICUT YANKEE ATOMIC POWER COMPANY
GENERAL ARRANGEMENT DRAWING
FINAL STATUS SURVEY SCOPE



C-05

**Exhibit D
Attachment 1**

ISSUED FOR DEMOLITION CONTRACT RFP. THIS DRAWING IS A CONTRACT DOCUMENT AND REQUIRES CONTRACT MANAGER APPROVAL FOR REVISION. REFERENCE DRAFT CONTRACT CY-04-001.



NOT TO SCALE / FOR PRESENTATION PURPOSES ONLY

Connecticut River

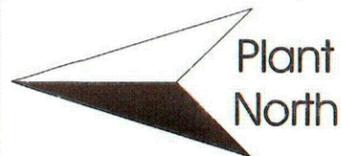
* Dates Represent Structure Availability for Turnover to Demolition Contractor

January 12, 2004 Rev. 3

Yetter/DemoRFP/Exhibit D Attachment 1.cdr

	APRIL 2004		OCTOBER 2004		DECEMBER 2005
	MAY 2004		JANUARY 2005		APRIL 2006
	JULY 2004		SEPTEMBER 2005		NOVEMBER 2006
	SEPTEMBER 2004		NOVEMBER 2005		

Attachment
D



CONNECTICUT YANKEE ATOMIC POWER COMPANY
GENERAL ARRANGEMENT DRAWING
DEMOLITION SEQUENCE



C-06